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A RECORD OF THE SLENDER-LEAVED WHITE MALLEE, *EUCALYPTUS FOECUNDA*, IN REABOLD PARK, PERTH

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Eucalyptus foecunda Schau. (syn. *E. leptophylla* F. Muell.) is known in the vernacular as the Slender-leaved White Mallee and also as the Slender-leaved Red Mallee.

Recently Seddon (*Sense of Place*, 1972, pp. 115-116) and Tingay and Tingay (*Eucalypts of the Perth Area*, 1976, pp. 10-11) have suggested that without protection this mallee will soon become extinct on the Coastal Plain. In this regard one of us (P.M.) observed that a very small solitary grove of these plants was destroyed when a limestone quarry in Bold Park (City Beach) adjacent to Challenger Drive was contoured.

The species *E. foecunda* occurs mostly in the drier inland areas of Western Australia and South Australia, and the plants found on the Swan Coastal Plain are generally considered to be remnants persisting since earlier and drier times. As a result the biology of the coastal plants, and their soil requirements appear interesting, but to date little is known of these.

We wish to record the existence of a comparatively large stand of Slender-leaved White Mallee in Reabold Park (Grid Reference 115° 46' 30" South and 31° 56' 38" East, Perth map, 2000/09.25) where they are growing strongly (December 8, 1977). The stand occurs uphill and immediately to the west of one of the footpaths in the bush to the west of Perry Lakes, and consists of two groups of the mallee. The smaller group (area ca.300 m²) is adjacent to the footpath. The larger group (area ca.1,900 m²) is a further 20 m west and stretches uphill some 60 m, the centre line of the grove having a magnetic compass bearing (uncorrected) of 268°.

Fortunately the Reabold Park fires of December 5 and 6, 1977 did not cross the footpath or reach the immediate vicinity of either group of plants.

Both groves are open and are interspersed with an interesting mixture of coastal and more woodland plants. Most common are: *Pelargonium capitatum*, *Hardenbergia comptoniana*, *Acacia pulchella*, *Angianthus cunninghamii*, *Grevillea thelemanniana*, *Hibbertia hypericoides*, *Conostylis setigera* and *Casuarina humilis* together with many large tufts of Veld grass.

The mallees themselves are between 1 m and 2 m tall. Some have flowered at least twice, as they bore mature nuts in December 1976. However, no fruits attributable to a flowering earlier than 1975/76 were observed.

The blossom attracts a wide variety of Arthropoda, insects being the major group. Amongst these are several families of Hymenoptera, Diptera, and Coleoptera. Spiders are present to prey upon the insects. For example in December 1977 there were many Christmas Spiders (*Gasteracantha minax*) in and around the mallees.

Of interest in the Coleoptera are three genera of Buprestidae (jewel beetles) that have been collected in the flowers: *Cisseis* sp., *Themognatha elegans* and *Castiarina*—two species. These were collected in 1949 and 1956. Since this time no Buprestids have been recorded from the mallee.

Seed from the 1975/76 flowering was viable in autumn 1977, when some of it germinated readily in a peat-sand mixture (approximately 1:3). The resultant seedlings are growing strongly and agree with the description given by G. Chippendale (*Eucalypts of the Western Australian Goldfields*, 1973, p. 138).

Seddon has suggested that the microhabitat of these plants in the coastal scrub is on calcareous soils over shallow limestone, generally nearer the coast than the Tuart (*Eucalyptus gomphocephala*). He has also drawn attention to other work on the calcareous soils on which many mallees grow.

Such suggestions are not inconsistent with the location of the stand of *E. foecunda* reported here, as the limestone outcrops 10 m to the south of the mallees, forming a spur to the dune. The Tuart and other eucalypts of the area grow further down hill to the east and north-east, while the grove lenses out to the west, near the top of the ridge, in open shrub land consisting of the same species growing in the stand, together with *Calothamnus quadrifidus* and *Dryandra sessilis*.

The mallees are growing in fine grey sand. Measurements of soil pH were made at several locations around the grove on three occasions and using two techniques.

On September 14, 1977 and November 8, 1977 field measurements were made by scraping the leaf litter aside, moistening the soil with distilled water and inserting an E.I.L. combination glass-calomel spear electrode into the damp sand. The pH was read on an E.I.L. 3030 field pH meter. On December 8, 1977 samples of surface soil were collected and their pH's determined by moistening 100 g of soil with 30 ml of distilled water and measuring the pH of the resultant thick slurry with an E.I.L. 7050 pH meter and combination glass-calomel electrode. Readings on any given sample or site were reproducible within ± 0.1 pH units on every occasion.

Average values (of at least three readings) of soil pH measured "in situ" under the mallees were 6.6, 7.4, 7.3, 7.4 and 7.4 on September 14, 1977, and 7.4 again at the last site on November 8, 1977, while on this latter occasion the pH of the soil outside the grove was 7.1 measured 10 m south of the eastern grove and 8.1 beside the limestone ridge south of the western grove. Laboratory readings of pH on the collected soils were 7.1 and 7.0 for samples collected from beneath the *E. foecunda* and 7.4 and 6.6 for samples collected to the north of the two groves.

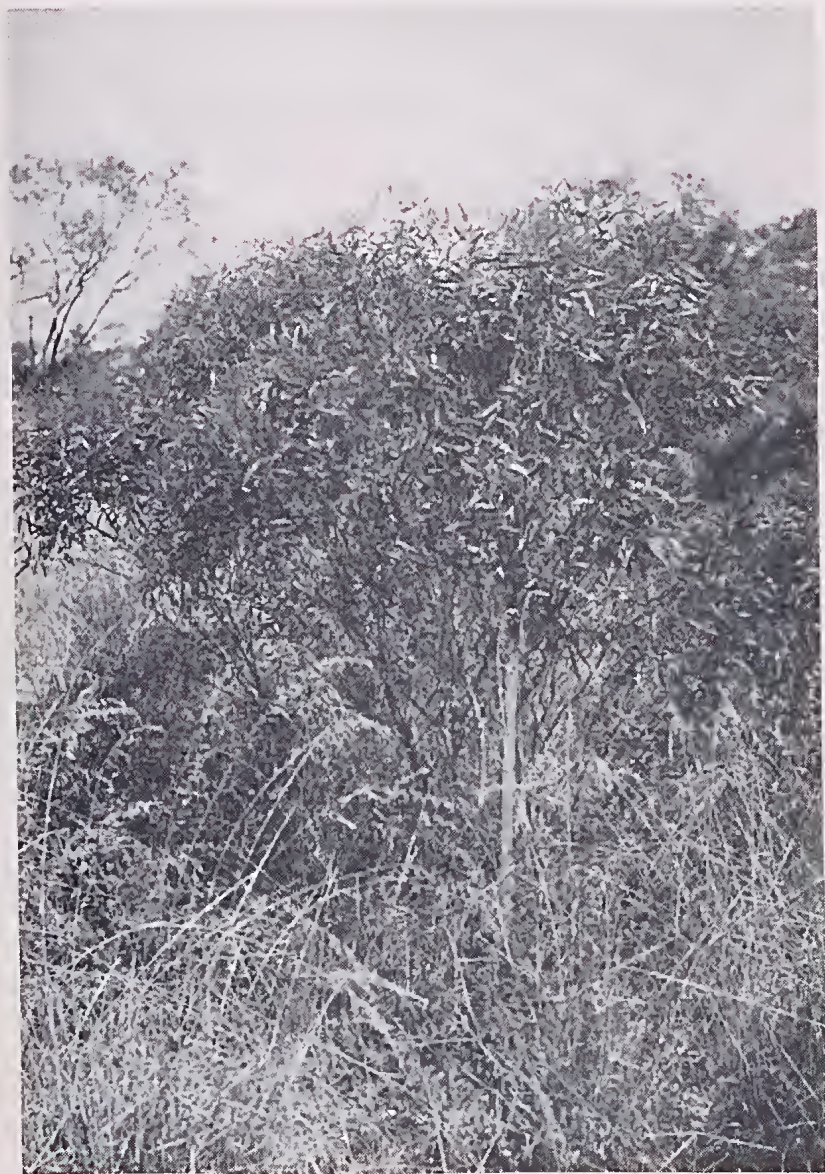
In view of such variation in pH in the area it does not appear as if surface soil pH is an important limiting factor in the distribution of the species in the coastal region, but further work is planned on this aspect.

Because of the occurrence of two common names for the mallee, and our own observations that in late winter and early spring the plants looked distinctly reddish in colour, while in summer they had a pale greenish white colour, we made a brief search for the source of the names. We were unable to locate these, but did find *E. foecunda* named as either "Ooragmande" or "Fremantle Mallee" and *E. leptophylla* as "Slender-leaved White Mallee" in W. F. Blakely's, "*A Key to the Eucalypts*" (1965, 3rd edition), first published in 1934.

Only two of the authors we located used the red mallee name. These were Tingay and Tingay (*loc. cit.*) and Chippendale (*loc. cit.*) the latter calling it "Narrow-leaved Red Mallee."

Description of *Eucalyptus foecunda*, as observed in the stand described here: The plants are thin-stemmed eucalypts with from 2 to 10 branching stems arising from each lignotuber. The bark is grey over the lower quarter, while the upper parts are smooth and red-brown in colour. The leaves are narrow, pointed and green, with a prominent mid rib, while many also have red margins (at least in spring). The flowers are small and white, occurring as groups of from 2 to 8 distinct fruits on a short peduncle. A few flowers have been observed throughout the period September to April, but the bulk of the plants flower in the December-February period. The buds have a conical operculum about the same length as the calyx. The fruits are small (ca.0.5 cm) with the valves inserted.

The illustration is a photograph of a typical specimen in early summer.



Eucalyptus foecunda at Reabold Park.